ENVIRONMENTAL FACT SHEET

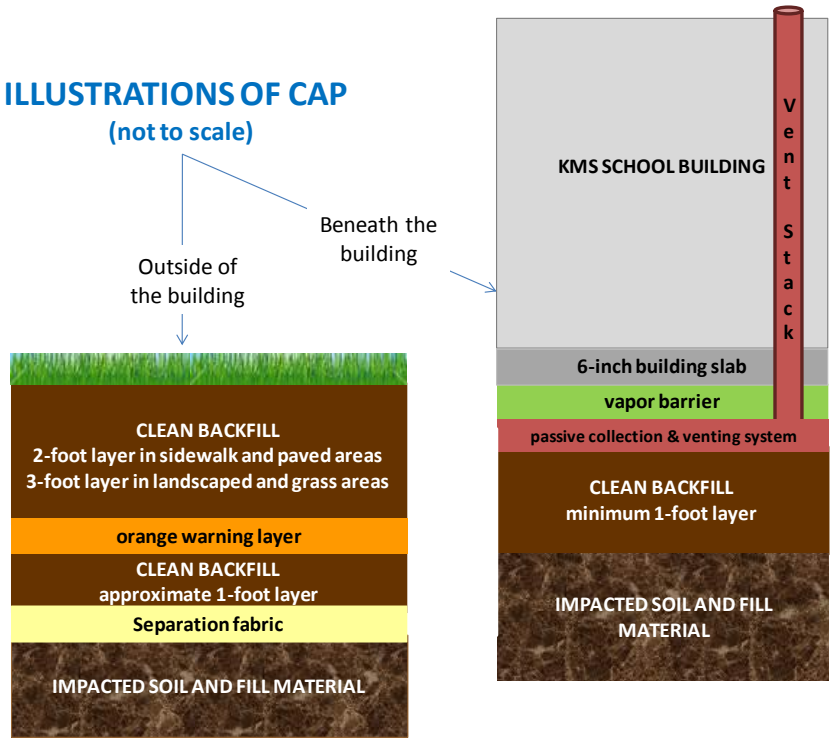
City of New Bedford's Environmental Monitoring at the Keith Middle School

City of New Bedford/TRC, August 2012

Keith Middle School was built on a portion of the Parker Street Waste Site. The City monitors school site conditions to ensure the protection of the health of building occupants, as required by the U.S. Environmental Protection Agency (EPA). The City's environmental consultant, TRC Environmental Corporation (TRC), implements the monitoring plan. This fact sheet describes how the **cap** was built, what is monitored at the school and campus, findings from these activities to date, and the next steps to address the findings. Terms in bold are defined in the Glossary of Terms at the end of the Fact Sheet.

It is safe for people to occupy Keith Middle School and use the school's campus.

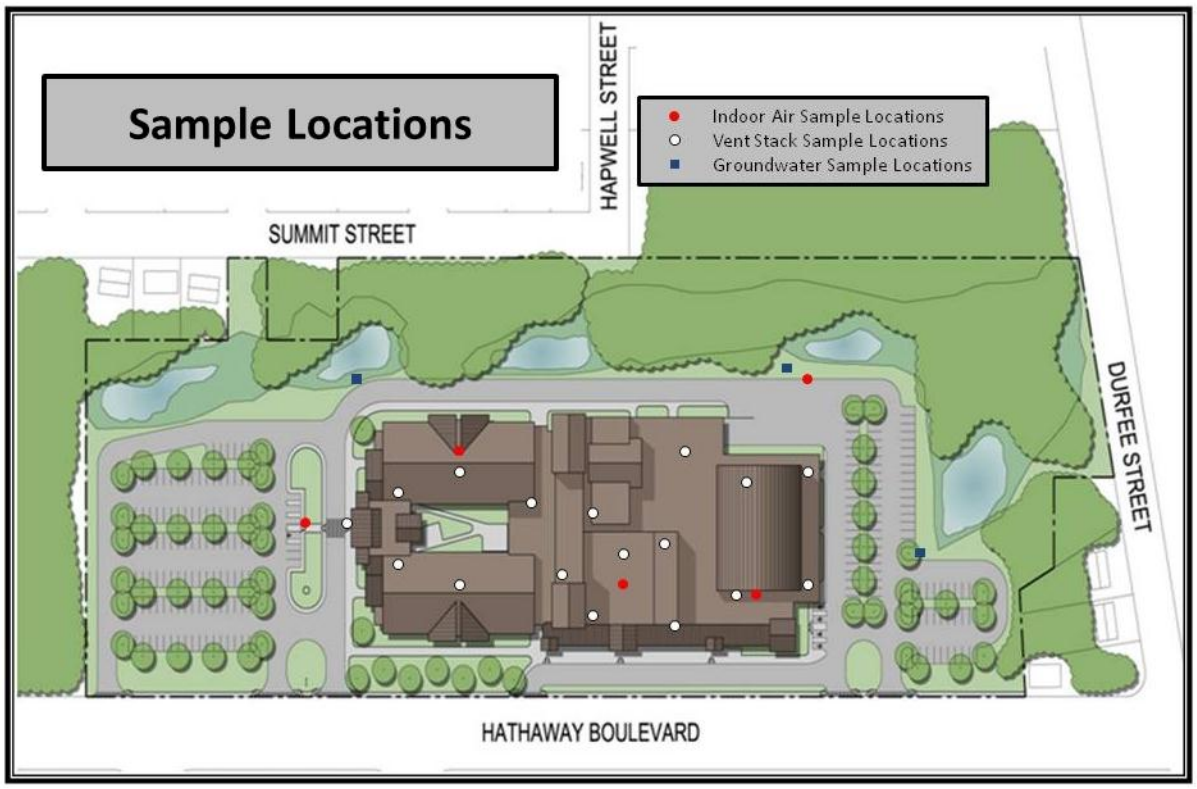
When Keith Middle School was built, a **cap** was installed beneath and around the building to prevent students, staff, and visitors from being exposed to impacted soil and fill. Under the building, this **cap** includes a vapor barrier that prevents vapors that may accumulate under the building from entering the building and affecting indoor air quality. With this barrier, vapors are vented through vent stacks (pipes that pass safely through the building walls up to the roof) from beneath the **cap** to the outdoor environment. Around the building, the **cap** of clean backfill prevents people from contacting impacted soil and fill. An orange warning barrier installed in the clean backfill provides a warning for anyone performing excavation to stop work.



Environmental monitoring continues

The City prepared and EPA approved a *Long-Term Monitoring and Maintenance Implementation Plan* that requires monitoring of the **cap**, indoor air, vent stacks, groundwater, and wetland sediment. The plan includes maintenance activities to ensure that the **cap** continues to prevent exposure to impacted soil. Under the plan, the City must periodically monitor groundwater, inspect and sample sediment from the wetland, and collect indoor air and vent stack air samples. The indoor air and vent stack air samples are analyzed for **volatile organic compounds (VOCs)** and **polychlorinated biphenyls (PCBs)** to assure that these chemicals are not moving from soil or groundwater beneath the school building to indoor air. The sediment samples are analyzed for **PCBs**.

Indoor air. TRC and BETA Group Inc. (BETA), the City's previous environmental consultant, have collected 27 rounds of indoor air monitoring data prior to and since the school was occupied in December 2006 (5 rounds in 2006, 8 rounds in 2007, 3 rounds in 2008, 3 rounds in 2009, 3 rounds in 2010, 3 rounds in 2011, and 2 rounds in 2012). The next round is scheduled to occur in August 2012. Based on TRC's completed evaluations, these indoor air concentration data indicate that there is no significant risk to the health of building occupants based on criteria established by the Massachusetts Department of Environmental Protection. TRC's evaluation included all chemicals detected in indoor air and was conducted in accordance with Massachusetts Contingency Plan guidelines, which require the assumption that someone spends 8 hours per day, 5 days per week for 27 years in locations where chemicals were detected. All indoor air concentrations of PCBs were detected at low concentrations or not at all, and are below an action level established by the EPA. Indoor air concentrations of VOCs have declined over time with less evaporation of VOCs from new building materials. TRC samples the outdoor air near the school each time that it samples the indoor air. **VOCs** and **PCBs** have been detected in outdoor air at very low concentrations or not at all. See the figure for air sample locations.



Vent Stack Air. TRC and a prior consultant have collected 28 rounds of vent gas data prior to and since the school was occupied in December 2006 (6 rounds in 2006, 8 rounds in 2007, 3 rounds in 2008, 3 rounds in 2009, 3 rounds in 2010, 3 rounds in 2011, and 2 rounds in 2012). Vent stack air samples are collected from the vent stacks shown on the figure on a rotation so that only some vent stacks are sampled each time. The next sampling round is scheduled to occur in August 2012. **VOCs** are consistently detected in the vent stacks. **PCBs** are infrequently detected in the vent stacks. **VOCs**, and to a lesser extent **PCBs**, are expected in vent stack air due to the nature of soil impacts under the **cap** and the

materials that were used to construct the vent stacks. These detections indicate that the ventilation system is performing as designed.

Groundwater. TRC has collected 9 rounds of groundwater samples starting in 2008 (2 rounds in 2008, 2 rounds in 2009, 2 rounds in 2010, 2 rounds in 2011, and 1 round in 2012). All TRC groundwater samples were analyzed for **VOCs**, **PCBs**, and metals. All of the results met state regulatory groundwater standards. See the figure for the groundwater sampling locations.

Wetland Sediment, Soil and Groundwater. Samples collected from the wetland adjacent to the Keith Middle School are the subject of a separate fact sheet, which, along with this fact sheet, is posted at the City's website under "Fact Sheets."

The Next Steps

The City will continue monitoring conditions at the Keith Middle School to protect human health and the environment. Monitoring includes updated risk evaluations for building occupants after each sampling round to ensure that their health is protected. The City will continue to post all results at its website.

In the spring of 2012, the City, in collaboration with TRC, proposed revisions to the *Long-Term Monitoring and Maintenance Implementation Plan* to EPA. These revisions, which were presented at the May 2012 Public Involvement Plan meeting for the Parker Street Waste Site, include a reduction in the number of cap inspections per year from three to two; a reduction in the number of indoor air and vent stack monitoring events per year from three to two; the elimination of VOC analysis for indoor air and groundwater samples (previous sampling has shown that VOCs are not chemicals of concern); and a reduction in employee training about the environmental monitoring program from every year to every other year (due to low employee turnover). The City did not receive any comments on these proposed revisions from the community during or following the public meeting. These revisions are expected to improve monitoring efficiency while remaining fully protective of human health and the environment. The City will wait for EPA's approval before implementing the proposed changes.

For More Information

All monitoring data and inspection reports are posted at the City's website http://www.newbedford-ma.gov/McCoy/sitemap/sitemap.html; filed under the "Keith Middle School" heading. The report from the August 2012 monitoring round is expected to be posted on the City's website during fall 2012. If you have additional questions, please contact Cheryl Henlin, City of New Bedford Environmental Stewardship Department, at (508) 991-6188 or email cheryl.henlin@newbedford-ma.gov.

GLOSSARY OF TERMS

Cap – The three feet of clean backfill in landscaped areas and the two feet of clean backfill in paved areas, as well as the fabric underneath these soil layers, that was brought to the site when the school was being built in 2006. This fabric and the soil on top of it keep people from coming into contact with underlying soil.

Polychlorinated biphenyls (PCBs) - Mixtures of up to 209 individual chlorinated compounds. There are no known natural sources of PCBs. Some PCBs can exist as vapor in air to a limited extent. PCBs have

no known smell or taste. In the past, PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they do not burn easily and are good insulators.

Volatile organic compounds (VOCs) - VOCs include a variety of chemical compounds given off as gases from certain solids or liquids. VOCs are given off by a wide array of products numbering in the thousands. Examples of products that can give off VOCs when in use, and to some degree when stored, include: paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, photographic solutions, and fuels and other petroleum-containing products.